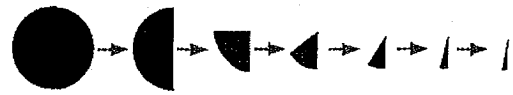
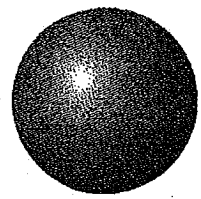
A Very Brief History of Atomic Theory

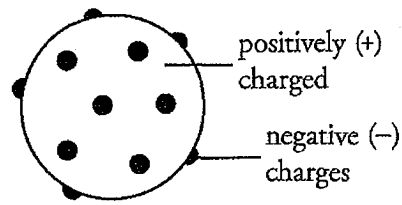
c. 460 B.C.E.: Democritus (Greek philosopher)
Proposed that matter cannot be broken down indefinitely. At some point you end up with a piece that can't be divided. That smallest piece he called an atom, from the Greek word *atomos,* which means "indivisible."



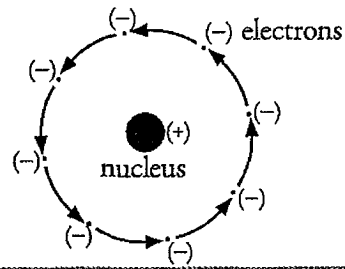
1807: John Dalton (British chemist)
The first modern scientist to propose the existence of atoms. He described an atom as an invisible, indestructible, solid sphere, like a billiard ball.



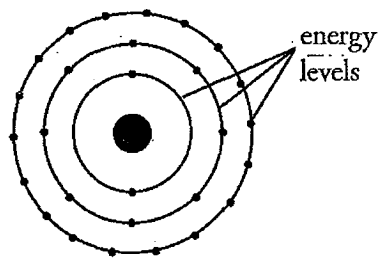
1898: Sir Joseph John (J.J.) Thomson (British physicist)
Proposed the "plum-pudding" model: An atom is a solid mass of positively charged material with negative charges (electrons) scattered through it like pieces of plum in pudding. He is credited with discovering the electron.



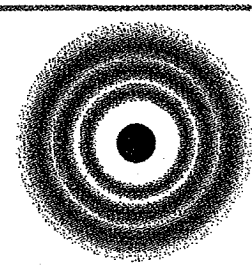
1911: Ernest Rutherford (British physicist)
His experiments proved that atoms are mostly empty space. Discovered the nucleus, which contains positively charged particles. Was the first to suggest that electrons circle the dense nucleus.



1913: Niels Bohr (Danish physicist)
Proposed that electrons move in different orbits, or energy levels, around the nucleus like planets orbit the sun. Each energy level is located a specific distance from the nucleus and contains a certain number of electrons.



Current Atomic Model
Based on the Bohr model, except that electrons orbit the nucleus in random paths. The regions where they are most likely to be found are called electron clouds.



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